

IN THE CLAIMS:

1. (Currently amended) A communication system comprising:

a plurality of terminals that are connected to an access network; and
said access network, having a transmission network, and an access node connecting said transmission network to a network switch, said access node including an access node switch coupled to said network switch, and further including a plurality of network control elements, said network control elements each including a network control switch and a plurality of channel cluster modules, wherein each of the channel cluster modules ~~[[are each]]~~ is arranged for transmitting downstream signals on a ~~respective~~ carrier frequency, selected from a plurality of known carrier frequencies, said transmission network comprising a plurality of sub-networks correspondingly coupled to said network control elements and to the plural terminals, said access node switch controlling all switching of the access network without said access node switch knowing a carrier frequency allocated to a terminal coupled to a sub-network of the plural sub-networks.

2. (canceled)

3. (previously presented) The communication system according to claim 1, wherein the channel cluster modules comprise at least one downstream channel module.

4. (previously presented) The communication system according to claim 3, wherein the channel cluster module comprises an upstream channel module.

5. (previously presented) The communication system according to claim 1, wherein a terminal of the plural terminals comprises signaling means for exchanging network layer control information with said network switch.

6. (previously presented) The communication system according to claim 1, wherein said network switch comprises proxy signaling means for deriving network layer

control information from session layer and/or transport layer information exchanged between a terminal and said network switch.

7. (Currently amended) An access node connectable to a transmission network, and to a network switch, the access node comprising:

an access node switch; and

a plurality of network control elements coupled to said access node switch, said access node switch being connectable to said network switch, wherein a network control element comprises a network control switch and a plurality of channel cluster modules, in that each of the channel cluster modules *[[are]]* is arranged for transmitting downstream signals on a ~~respective~~ carrier frequency selected from a plurality of known carrier frequencies, and are connectable, correspondingly to sub-networks of said transmission network, and the access node switch controls all switching of the access network without said access node switch knowing a carrier frequency allocated to a terminal coupled to a sub-network of said sub-networks.

8. (previously presented) The system of claim 1, wherein said access node switch receives, from said network switch, a packet having a field that identifies a network control element of said network control elements and a respective carrier frequency, part of said field being replaced with an identifier of a route from said network control element to a destination terminal of said packet, said packet being transmitted with its field partly replaced for modulation of content of said packet onto the respective carrier frequency.

9. (previously presented) The access node of claim 7, wherein said access node switch receives, from said network switch, a packet having a field that identifies a network control element of said network control elements and a respective carrier frequency, said part of said field being replaced with an identifier of a route from said network control element to a destination terminal of said packet, said packet being

transmitted with its field partly replaced for modulation of content of said packet onto the respective carrier frequency.

10. (Currently amended) An access node for connecting a network switch to a plurality of sub-networks of a transmission network, the plural sub-networks being respectively connectable to a plurality of terminals, said access node comprising:

- an access node switch; and
- a plurality of network control elements, said access node being configured to direct a signal, transmitted on a plurality of unique carrier frequencies selected from a plurality of known carrier frequencies, from said network switch to a terminal of the plural terminals intended as a destination, thereby said network switch is relieved of knowing details of said access network that said network switch would otherwise need for directing said signal to an intended destination terminal.

11. (previously presented) The access node of claim 10, further including a network control switch and a translation unit, said network control switch configured for routing said signal received from said access node switch, via said translation unit, to said terminal of the plural terminals, without said access node switch having to know a carrier frequency allocated to said terminal.

12. (previously presented) The access node of claim 11, wherein each of the plural network control elements includes a network control switch connecting the access node switch to respective ones of the plural terminals, said network control switch for routing being a network control switch for said connecting, each network control switch being configured for switching said signal onto a respective one of predetermined carrier frequencies.

13. (previously presented) The access node of claim 12, wherein a network control element of the plural network control elements further includes a plurality of channel cluster modules that connect the network control switch of said network control

element to a corresponding one of the plural terminals, each of the plural channel cluster modules being arranged for transmitting downstream on a respective, single carrier frequency.

14. (previously presented) The access node of claim 10, wherein said details are said access node being configured to direct said signal from said network switch to said terminal relieves said network switch of requiring details of the access network.

15. (previously presented) A communication system comprising the access node, the transmission network and the plural terminals of claim 10.

16. (previously presented) The system of claim 15, wherein a terminal of the plural terminals comprises signaling means for exchanging layer control information with said network switch, said control information being exchanged transparently between the signaling terminal and said network switch.

17. (previously presented) The system of claim 15, further comprising an access network that includes said access node and said transmission network, wherein said network switch comprises a proxy signaling function for deriving network layer control information from at least one of session layer and transport layer information exchanged, over said access network, between a terminal of the plural terminals and said network switch.

18. (previously presented) The system of claim 15, further including said network switch, wherein said network switch is connected to an external network, and is configured to set up a connection between said external network and said access node for a call by sending respective set-up messages to said external network and said access node in response to receipt, at said access node, of a request transmitted by one of the plural terminals by a transparent connection to said network switch.

19. (previously presented) The system of claim 18, wherein said access node, in response to receiving the respective set-up message, reserves resources for the call and subsequently submits a set-up message downstream toward said one of the plural terminals.

20. (Currently amended) A method for configuring a communication system, comprising:

providing a transmission network;

providing a network switch;

connecting, by means of a access node, said network switch to the transmission network, said access node including an access node switch and a plurality of network control elements;

connecting, correspondingly, a plurality of sub-networks to the plural network control elements; and

connecting, respectively, a plurality of terminals to the plural sub-networks, said access node being configured to direct a signal, transmitted on a plurality of unique carrier signals selected from a plurality of known carrier frequencies, from said network switch to a terminal of the plural terminals intended as a destination, wherein said network switch is relieved of knowing details of said access network that said network switch would otherwise need for directing said signal to the intended destination terminal.